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ABSTRACT

This study was conducted to assess differences in preferred learning styles between four groups of preservice teachers (N=568), first year through senior year, and to determine if teaching level interest and gender are also factors associated with learning style preference. Participants completed a questionnaire rating five professors each of whom was skilled in either lecturing, group discussion, independent learning, simulation, or using a variety of classroom methods. Analysis of variance found statistically significant differences between first year students and students in the other three years. First-year students preferred lectures; juniors preferred group discussion; and sophomores, juniors, and seniors preferred independent study. Significant main effects were found between university level and preference for both case studies and a variety of teaching methods, but no specific group differences were found. Gender was not related to preference for lectures, group discussion, or case studies, but first year women held significantly lower preference for independent study than did junior and senior women. Women expressed a higher preference for a variety of teaching methods than men. Knowledge of student preferences for learning activities could be used by professors to individualize courses thereby increasing motivation and satisfaction with learning. (Contains 14 references.) (LL)

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Five Instructors - A Study of Instructional Preferences of Preservice Teachers

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Abstract

Five Instructors - A Study of Instructional Preferences of Preservice Teachers

Four groups of preservice teachers, first year through senior year, were compared on their preferences for five different instructors, each of whom was highly skilled in either lecturing, leading group discussions, independent learning, simulation, or using a variety of teaching methods. Analysis of variance found statistically significant differences between first year and the three other groups where first year students held a strong preference for lectures. Juniors strongly preferred group discussion, while first year students held group discussion in low regard. Sophomores, juniors and seniors strongly prefer independent study while first year students did not prefer independent study. Significant main effects were found between university level and preference for both case studies and a variety of teaching methods, but no specific group differences were found. Gender was not related to preference for lectures, group discussion, or case studies, but first year women held significantly lower preference for independent study than junior and senior women. Women expressed a higher preference for a variety of teaching methods than men.

The purpose of this study is to assess the differences in preferred learning styles between four groups of preservice teachers; first year through senior and to determine if teaching level interest and gender are also factors associated with learning style preference of preservice teachers.

In this study, learning styles are defined as the instructional methods, learning activities, and course goals most preferred by students as they interact with instructors at the college level. Knowledge of student preferences for learning activities could be used by professors to individualize some part of each course and increase motivation and satisfaction with learning.

Previous research on learning style preference in college samples and the results on cognitive and affective outcomes are presented below.

Review of Learning Styles Literature

Guetzkow, Kelly and McKeachie (1954) studied the effects of three teaching methods, recitation-drill, group-discussion, and tutorial-study on achievement and attitudes toward psychology in a freshman general psychology course. They found no practical differences between the three teaching methods on achievement but the discussion method produced slightly more favorable attitudes toward psychology than drill and tutorial methods. Preference for instructional method was also examined by comparing preference before and after the course. At the beginning of the course recitation and discussion were equally preferred and tutorial less so. Students in recitation sections showed a statistically significant gain in their preference for this method, while students in discussion and tutorial sections showed no significant changes in preference. Preference for a teaching method and learning under that method had no influence on performance on the final examination.

James (1962) attempted to enhance student achievement in Air Force trainees by comparing student preference for reading or lecture modes. He found two significant interactions--reading produced higher achievement and the reading preference produced greater achievement for higher ability students. But he also found that the highest achievement was earned by trainees who had no instructional preference. The limitations of the study are that no objective measure of preference for instruction was used, the "lecture" was listening to a tape recording, and no attitude measures toward instruction were used.

Domino (1971) studied whether college freshmen taught by methods that were consonant with their achievement needs would achieve higher grades and have more positive attitudes toward the course than unmatched students. Two scales, achievement via independence and achievement via conformity from Gough's California Psychological Inventory measured achievement needs. From an entering Freshman class of 900, the 50 high Ac low Ai and top 50 low Ac high Ai students were identified. Eliminated were those whose SAT score fell below 550 or above 650. These 100 students were assigned to four introductory psychology sections with the same instructor and were equal in sex composition and mean SAT scores, but homogeneous in achievement needs.

One group of high Ac and one group of high Ai students were taught by the lecture method that stressed factual information that paralleled the textbook and required class attendance. For the high Ai and Ac groups taught in an independent manner, emphasis was placed on ideas rather than facts and active participation by students rather than professor lectures. Students taught in a manner consonant with their achievement orientation obtained significantly higher means on multiple choice final examination items and higher factual knowledge on ratings of essay answers, and gave higher teacher and course evaluations than peers taught in a dissonant manner.

Pascal (1971) examined the educational outcomes of matching undergraduate students' instructional preferences for lecture, lecture and discussion, and independent study in an undergraduate psychology course titled "Socialization." A minimum of fifty students were assigned to each of the three instructional options. About one-half of each group were randomly assigned to the method which they listed as their first option; the other half were randomly assigned to their second or third choice. Students who received their preferred learning method did not earn higher grades or rate the course as more valuable compared to students who did not learn under their first preference. However, students who learned under their preferred method expressed a more positive attitude toward psychology and students who preferred lecture and lecture and discussion performed better on knowledge and comprehension type final examination questions. Students in the lecture-discussion and independent study options did not perform better on the application part of the final examination; however independent reading students scored higher than the other two groups on the evaluation of a novel article. Students assigned to the non-preferred independent study option rated the course more difficult and anxiety provoking than students who preferred this option. Students in the study favored having instructional options; 93.5 percent and 91.6 percent thought options provided them with freedom and individualization. Pascal suggested that more differences were not found due to the preference factor because of the professor of the lecture option who was well liked. Students commented that her lectures caused some to change their minds as to which option they preferred.

Hunt (1975, 1979) has developed the construct, Conceptual Level which is the amount of structure a student needs to learn best. In high structure the learning environment is largely determined by the instructor, and the student

has little responsibility while in low structure the student is much more responsible for organizing the learning environment. Hunt believes it is the amount of complexity in the learning environment that determines growth from dependence to greater self responsibility and increased capacity for considering alternative answers. Structure for learning can easily be understood by comparing instructors who lecture, examine on factual material with multiple choice tests with instructors who use independent study and case studies to solve problems and examinations are written evaluations of a "best" solution in a specific context.

Shaw and Brent (1977) found a significant interaction between preference for structure and course achievement but not course satisfaction using a sample of introductory psychology students. Specifically they found students high in their need for structure but in a low structure class achieved at a lower level than groups that were matched for structure.

Smith (1976) researched teaching method preference by developing a 54-item instrument that measured nine different instructional strategies: (1) projects, (2) drill and recitation, (3) peer teaching, (4) discussion, (5) teaching games, (6) independent study, (7) programmed instruction, (8) lecture, and (9) simulation. She then used the instrument in an experiment with young adolescents who were matched in instruction preference for lecture, discussion and simulation. She found that the teaching method preference correlated .38 with achievement and .23 with motivation. Smith concluded students differ in their preference for teaching modalities and that teaching method matching can significantly enhance educational outcomes.

Brainard and Omen (1977) surveyed community college students on their instructional preferences using the Canfield-Lafferty Learning Styles inventory. They found females were statistically significantly different from males in their preference for course structure and organization, academic

expectations, interest in the use of language, and the importance of people in their courses of study. By contrast, males expressed higher preference for independent learning using numbers in learning, having direct learning experiences and a competitive learning environment.

Ristow and Edeburn (1983) surveyed 115 sophomore/junior level preservice teachers in Educational Psychology classes at South Dakota State University on their instructional preferences using the Renzuli-Smith Learning Style Inventory. The five instructional methods receiving the highest percentage of favorable responses were: lecture (72%), teaching games (68%), programmed instruction (67%), peer teaching (65.5%), and discussion (60.9%). The three methods reserving the lowest percentage of favorable responses were: independent study (24.5%), simulations (21.8%) and drill recitation (19.1%). They replicated their study in 1984 with 150 sophomore/juniors and found the lecture (71.9%), discussion (68.6%), peer teaching and teaching games both (60.1%) to be most preferred. Only programmed instruction, which declined from 67% to 26% favorable attitudes changed among the first five preferred methods in 1983. They found the three least preferred methods, all with 20.3% unfavorable attitudes were independent study, drill and recitation and projects.

Methods

Subjects

Subjects are 568 undergraduates in a teacher preparation program at a selective admission state assisted university in the midwest. There are 51 freshmen, 150 sophomores, 249 juniors and 118 seniors in the sample.

Measurement

The scale used to measure preference for learning styles was a five item Likert-type questionnaire developed by the author following the lead of Yamamoto and Dizney (1966). The questionnaire described five different

professors each of whom was skilled in either lecturing, group discussion, independent learning, simulation or using a variety of classroom methods. Subjects rated each description on a continuum from most effective through undecided to most ineffective. Presented below on the descriptions of the five instructors.

Professor A is widely respected by students for thorough, well organized lectures where such visual aids as an overhead projector are used to help students follow the lecture. Examination questions are based on the lecture and are multiple choice, matching and true-false type and involve the recall of knowledge. Professor A is warm and friendly and meets with students after class to help them learn.

Professor B is widely respected by students for conducting class discussions where critical thinking is the main goal. Students learn to think and participate in a group where different points of view are presented. Examination questions are essay type and require analytical and evaluative thinking and are based on the group discussions. Professor B is warm and friendly and meets with students after class to help them learn.

Professor C is widely respected by students for conducting a class that requires independent learning in the library and the computer instructional center. Students learn alone and write critical reports on the books, journals and the other material learned outside of class. Examinations are written reports that require evaluative thinking. Professor C is warm and friendly meets with students after class to help them learn.

Professor D is widely respected by students for conducting classes where case studies and simulations tasks are used to solve "real world" problems. Examinations are case studies that require written solutions and recommendations that would help solve a problem. Professor D is warm and friendly and meets with students after class to help them learn.

Professor E is widely respected by students for conducting classes where a variety of instructional methods are used including lectures, group discussion, library research, and independent study. Examinations are a combination of multiple choice, essay, matching and true-false. Professor E is warm and friendly and meets with students after class to help them learn.

Data Analysis

The data was analyzed using analysis of variance. If a significant main effect was found, one-way analysis of variance and the Tukey Multiple Range Test was used for further testing.

Results

The results based on ANOVA will be presented according to the five types of instructors as they interact with the four levels of university students and gender. If a significant F was found, further testing using the one-way analysis of variance and the Tukey Multiple Range Test results will be reported.

A significant main effect between university level students and preference for instructors who lecture, present factual information and examine with objective tests was found (F=.284, df=3, p=.03). When the four levels of university students were compared with each other using one-way analysis of variance, a significant difference between the four groups was found (F=2.94, df=3, p=03). The Tukey test showed significant differences between first year students (M = 4.43 and juniors M = 4.02) where first year students strongly prefer professors who lecture compared to juniors who expressed lower preference for such instruction. Gender was not related to preference for lectures.

A significant main effect was also found between university level and preference for instructors who lead discussion oriented classes (F=3.06, df=3, p=.02). The one-way test between the four levels of university students was also significant (F=3.10, df=3, p=.02) and the Tukey test showed significant differences between first year and Juniors in their preference for discussion with Juniors preferring discussions (M=4.06) and first year students not preferring discussions (M=3.58). No main effects or interactions with gender were found.

Significant main effects were found between university level and gender and preference for independent learning (university level F=2.68, df=3, p = .04,) (gender F=5.68, df=1, p=.01). The analysis of variance indicated a significant differences among the four levels of university students (F=3.18,

df=3, p=.02) and the Tukey test showed significantly higher preference for independent study by sophomores, juniors and seniors while first year students expressed a significantly lower preference for independent study. The one-way analysis of variance indicated a significant gender difference with males expressing higher preference for independent study than females (F=7.21, df=1, p=.00). Further analysis of the female groups indicated a significant difference (F=2.82, df=3, p=.03) among the four levels of university standing for women and preference for independent learning. The Tukey test indicated first year women students with significantly lower preference for independent study than junior and senior women.

A significant main effect between university level and preference for case studies was found (F=2.53, df=3, p=.05) But no specific group differences were detected by the Tukey test. No gender effect was found.

A significant main effect between preference for instructors who use a variety of teaching methods and gender was determined (F=6.24, df=1, p=.01), with women expressing higher preference for variety than males.

Discussion

These findings are consistent with the thinking of Perry (1970) who found that first year college students believe all knowledge is certain and can be obtained from authorities. First year students in this study report higher preference for instructors who lecture, teach factual information, and examine with objective tests. Perry also found that older college students recognize multiple possibilities in most areas of knowledge and the older students in this study, compared to first year students, prefer discussion type classes where critical thinking is the goal and independent study where research is conducted and papers written for a course grade. No gender differences were found in student preference for lecture or discussion classes, but gender was found to significantly influence preference for independent study with first

year women opposing independent study and sophomores, junior and senior women showing no difference with men. This finding is consistent with results of Skipper (1988) who found male teacher candidates prefer independent study but not females. Women do express significantly higher preference for instructors who use a variety of teaching methods like lecture, discussion, and independent study.

These findings can also be interpreted in the context of Hunt's thinking on cognitive complexity (1975, 1979). Hunt has described a construct, conceptual level, which is the amount of structure or organizations a student needs in a learning environment to learn best. In high structure the learning environment is largely determined by the instructor and the student has little responsibility other than receiving instruction. In low structure, the students are much more responsible for organizing their learning. Hunt believes it is the amount of complexity in the learning environment that helps determine growth from dependence to greater self responsibility and increased ability to consider alternative answers. These findings support the Conceptual Level Construct where first year students do not prefer cognitively complex classes but prefer instructors who will given them certain facts and ask them to recall these facts on a multiple choice test. These same first year students do not prefer discussion or independent learning when information is complex rather than certain while older students, juniors and seniors, prefer discussion and independent study, critical thinking, essay tests and written reports. Skipper (1990) studied intellectually gifted honor program students with ACT scores of 30 and above in a selective admission state assisted mid-Western University. Using discriminate analysis, he found a function that properly classified 72.9 percent of the first year students and 66.7 percent of the seniors on the basis of preference for cognitive complexity. First year students preferred lecture, factual information, and

objective tests, while seniors preferred independent study, critical analysis, and written papers.

The simple questionnaire used in this study could be used by instructors to quickly determine what proportion of their students prefer various instructional methods. The results could be tabulated, summarized and discussed in class to help students better understand how the class as a group prefers to learn.

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